

WHAT IS CLAIMED IS:

1 1. An electrode-rolled battery in which an anode and a
2 cathode are rolled in a manner that a separator is put between
3 said anode and said cathode and in which a plurality of collecting
4 tabs is respectively provided with a plurality of anode active
5 material unformed parts of said anode and a plurality of cathode
6 active material forming parts of said cathode; and

7 wherein when a length of an outermost anode active material
8 unformed part is set as "L"; and when a distance from said outermost
9 anode active material unformed part to a center of a rolled body
10 made up of said anode, said cathode and said separator, is set
11 as "R", a following expression is set:

12
$$L \geq 2\pi R.$$

1 2. The electrode-rolled battery according to Claim 1,
2 wherein each of said collecting tabs is arranged regularly on an
3 end face of said rolled body.

1 3. An electrode-rolled battery in which an anode and a
2 cathode are rolled in a manner that a separator is put between
3 said anode and said cathode and in which a plurality of collecting
4 tabs is respectively provided with a plurality of anode active
5 material unformed parts and a plurality of cathode active material
6 forming parts; and

7 wherein when a length of an outermost anode active material
8 unformed part is set as "L"; and when a distance from said outermost
9 anode active material unformed part to a center of a rolled body
10 made up of said anode, said cathode and said separator, is set
11 as "R", when a deviation between a start point of said outermost

12 anode active material unformed part and a start point of a
13 outermost cathode active material forming part which is opposite
14 to said outermost anode active material unformed part is set as
15 " α ", and when a deviation between an end point of said outermost
16 anode active material unformed part and an end point of said
17 outermost cathode active material forming part which is opposite
18 to said outermost anode active material unformed part is set as
19 " β ", a following expression is set:

$$L = 2\pi R + \alpha + \beta.$$

1 4. The electrode-rolled battery according to Claim 3,
2 wherein each of said collecting tabs is arranged regularly on an
3 end face of said rolled body.

1 5. An electrode-rolled battery comprising:
2 an anode having a first band-shaped electrode and
3 intermittently having anode active material forming parts on both
4 sides of said first band-shaped electrode in a longitudinal
5 direction;

6 a cathode having a second band-shaped electrode and
7 intermittently having cathode active material forming parts on
8 both sides of said first band-shaped electrode in a longitudinal
9 direction;

10 a plurality of first collecting tabs formed in said anode
11 active material forming parts of said first band-shaped
12 electrode;

13 a plurality of second collecting tabs formed in said cathode
14 active material unformed parts of said second band-shaped
15 electrode; and

16 a separator put between said cathode and said anode;

said electrode-rolled battery in which said anode, said cathode and said separator are rolled; and

wherein when a length of an outermost anode active material unformed part is set as "L"; and when a distance from said outermost anode active material unformed part to a center of a rolled body made up of said anode, said cathode and said separator, is set as "R", when a deviation between a start point of said outermost anode active material unformed part and a start point of a outermost cathode active material forming part which is opposite to said outermost anode active material unformed part is set as " α ", and when a deviation between an end point of said outermost anode active material unformed part and an end point of said outermost cathode active material forming part which is opposite to said outermost anode active material unformed part is set as " β ", a following expression is set:

$$L \geq 2\pi R.$$

6. The electrode-rolled battery according to Claim 5, wherein each of said collecting tabs is arranged regularly on an end face of said rolled body.

7. An electrode-rolled battery comprising:
an anode having a first band-shaped electrode and intermittently having anode active material forming parts on both sides of said first band-shaped electrode in a longitudinal direction;

a cathode having a second band-shaped electrode and intermittently having cathode active material forming parts on both sides of said second band-shaped electrode in a longitudinal direction;

10 a plurality of first collecting tabs formed in said anode
11 active material forming parts of said anode;

12 a plurality of second collecting tabs formed in said cathode
13 active material unformed parts of said cathode; and

14 a separator put between said cathode and said anode:

15 said electrode-rolled battery in which said cathode, said
16 anode and said separator are rolled; and

17 wherein when a length of an outermost anode active material
18 unformed part is set as "L"; and when a distance from said outermost
19 anode active material unformed part to a center of a rolled body
20 made up of said anode, said cathode and said separator, is set
21 as "R", when a deviation between a start point of said outermost
22 anode active material unformed part and a start point of a
23 outermost cathode active material forming part which is opposite
24 to said outermost anode active material unformed part is set as
25 " α ", and when a deviation between an end point of said outermost
26 anode active material unformed part and an end point of said
27 outermost cathode active material forming part which is opposite
28 to said outermost anode active material unformed part is set as
29 " β ", a following expression is set:

30
$$L = 2\pi R + \alpha + \beta.$$

1 8. The electrode-rolled battery according to Claim 7,
2 wherein each of said collecting tabs is arranged regularly on an
3 end face of said rolled body.

1 9. A method of manufacturing an electrode-rolled
2 battery in which an anode and a cathode are rolled in a manner
3 that a separator is put between said anode and said cathode and
4 in which a plurality of collecting tabs is respectively provided

$$20 \quad L = 2\pi R + \alpha + \beta.$$

1 13. A method of manufacturing an electrode-rolled
2 battery comprising:

7 a cathode forming process of forming a cathode by
8 intermittently forming cathode active material forming parts on
9 both sides of a second band-shaped electrode in a longitudinal
0 direction;

16 a rolling process of rolling said cathode and said anode,
17 and a separator which is put between said cathode and said anode;

```

20      a header connecting process of connecting a collecting
21      header to said first collecting tabs which are gathered;

```

22 a second tab gathering process of gathering each of said

23 second collecting tabs;
24 an electrolyte injecting process of injecting electrolyte
25 into said rolled body using an electrolyte injecting apparatus:
26 wherein when a length of an outermost anode active material
27 unformed part is set as "L"; and when a distance from said outermost
28 anode active material unformed part to a center of a rolled body
29 made up of said anode, said cathode and said separator, is set
30 as "R", a following expression is set:
31
$$L \geq 2\pi R.$$

1 14. The method according to Claim 13, wherein each of said
2 collecting tabs is arranged regularly on an end face of said rolled
3 body.

1 15. A method of manufacturing an electrode-rolled
2 battery comprising:

3 an anode forming process of forming an anode by
4 intermittently forming anode active material forming parts on
5 both sides of a first band-shaped electrode in a longitudinal
6 direction;

7 a cathode forming process of forming a cathode by
8 intermittently forming cathode active material forming parts on
9 both sides of a second band-shaped electrode in a longitudinal
10 direction;

11 a connecting process of connecting a plurality of first
12 collecting tabs to anode active material unformed parts of said
13 first band-shaped electrode and of connecting a plurality of
14 second collecting tabs to cathode active material unformed parts
15 of said second band-shaped electrode;

16 a rolling process of rolling said cathode and said anode,
17 and a separator which is put between said cathode and said anode;
18 a first tab gathering process of gathering each of said first
19 collecting tabs;
20 a header connecting process of connecting a collecting
21 header to said first collecting tabs which are gathered;
22 a second tab gathering process of gathering each of said
23 second collecting tabs;
24 an electrolyte injecting process of injecting electrolyte
25 into said rolled body using an electrolyte injecting apparatus:
26 wherein when a length of an outermost anode active material
27 unformed part is set as "L"; and when a distance from said outermost
28 anode active material unformed part to a center of a rolled body
29 made up of said anode, said cathode and said separator, is set
30 as "R", when a deviation between a start point of said outermost
31 anode active material unformed part and a start point of a
32 outermost cathode active material forming part which is opposite
33 to said outermost anode active material unformed part is set as
34 " α ", and when a deviation between an end point of said outermost
35 anode active material unformed part and an end point of said
36 outermost cathode active material forming part which is opposite
37 to said outermost anode active material unformed part is set as
38 " β ", a following expression is set:
39
$$L = 2\pi R + \alpha + \beta.$$

1 16. The method according to Claim 15, wherein each of said
2 collecting tabs is arranged regularly on an end face of said rolled
3 body.